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Cancel Claims 1 to 10

1 11. A method of forming a plurality of metal bumps,
2 comprising:

3 (a)providing a chip whose surface comprises a plurality
4 of metal pads;

5 (b)forming a photoresist layer on the chip;

6 (c)performing an etching process to remove the
7 photoresist layer covering the metal pad so as to form a
8 hole that exposes the metal pad;

9 (d)filling the hole with a metal layer;

10 (e)completely removing the remaining photoresist layer;

11 (f)depositing an insulating layer on the chip to cover
12 the metal layer; and

13 (g)performing an anisotropic dry etching process to
14 remove the insulating layer positioned on the top of the
15 metal layer and on the surface of the chip so as to leave
16 the insulating layer positioned on the sidewall of the metal
17 layer.

1 12. The method of claim 11, wherein the metal layer is made
2 of Au.

1 13. The method of claim 11, wherein the insulating layer is
2 made of silicon oxide or silicon nitride.

1 14. The method of claim 11, wherein the anisotropic dry
2 etching process is a reactive ion etching (RIE) method.

1 15. The method of claim 11, wherein the metal bump is used
2 for connecting the chip with a nonconducting substrate, and
3 the space between two adjacent metal bumps is filled with an
4 anisotropic conductive film (ACF).

1 16. A method of forming a plurality of metal bumps,
2 comprising:

3 (a) providing a chip whose surface comprises a plurality
4 of metal pads;

5 (b) forming a photoresist layer on the chip;

6 (c) performing a first etching process to removing the
7 photoresist layer that covers the surface and periphery of
8 the metal pad so as to form a first hole that exposes the
9 metal pad;

10 (d) depositing an insulating layer on the chip to fill
11 the first hole;

12 (e) performing a second etching process to remove the
13 insulating layer positioned on the surface of the metal pad

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14 and remain the insulating layer positioned on the sidewall
15 of the first hole, and thereby a second hole is formed;

16 (f) filling the second hole with a metal layer; and

17 (g) removing the remaining photoresist layer.

1 17. The method of claim 16, wherein the metal layer is made
2 of Au.

1 18. The method of claim 16, wherein the insulating layer is
2 made of silicon oxide or silicon nitride.

1 19. The method of claim 16, wherein the metal bump is used
2 for connecting the chip with a nonconducting substrate and
3 the space between two adjacent metal bumps is filled with an
4 anisotropic conductive film (ACF).